

REMARKS

Claims 1-11, of which claims 6 and 11 are amended, and new claims 12-20 are pending in this application. Claim 6 is rewritten in independent form to overcome the claim objection. Claim 11, which was indicated as allowed in the Office Action, is amended to correct a typographical error. New claims 12-20 have been added to cover preferred embodiments of the invention, as supported by the specification and the original claims. As no new matter is added, Applicant respectfully requests that the amendments be entered into the application at this time.

Claims 1-5 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,403,109 (Stora) for the reasons set forth on page 2 of the Office Action. Applicant respectfully traverses the rejection.

While a transparent emulsion has been disclosed by Stora, the present composition differs from that of Stora in that it has improved physical stability. Stora discloses water-in-oil (W/O) and oil-in-water (O/W) perfuming emulsions in which the refractive indexes (n) of the dispersed phase and the continuous phase are very close, with the difference between the indexes being less than or equal to 0.003, so that a transparent emulsion is obtained. In contrast, the present invention seeks to effectively improve the physical stability of the Stora emulsions by bringing the density values of the oily phase and the aqueous phase closer to each other such that difference between the two densities is less than or equal to 0.007.

As is well known to a person skilled in the art, water has a density of about 1 or slightly higher, depending on the solvent that may be present. Oils, on the other hand, have a density of about 0.8 to 0.93, and are therefore lighter than water. For example, the highest density for a cooking oil is 0.926, the density of cotton seed oil (see "Density of Cooking Oil," at <http://hypertextbook.com/facts/2000/IngaDorfman.shtml>, a copy of which is attached as Exhibit A). Hence, a skilled artisan would know that the difference between the oil and water densities is generally greater than 0.074, the difference between the density of water and that of the highest density oil, cotton seed oil.

Applicant has surprisingly found that the densities of oil and water can be brought together to decrease the density difference in a transparent perfuming emulsion, with the density difference being about 10 times smaller than what would normally be expected. The density difference between oil and water is advantageously decreased in the present invention

by adding a certain agent, such as volatile fluorinated oil, to the oily phase of the perfuming composition. As explained in the specification, however, any agent with a higher density than oil that is oil-soluble can be used to decrease the density difference between the oily and aqueous phases (see published application, paragraphs [0027]-[0028]).

Decreasing the density difference to about 0.007 or lower has the surprising and advantageous effect of significantly improving the physical stability of the perfuming composition, thus addressing the physical stability problems of W/O and O/W emulsions of the prior art, such as the creaming and sedimentation problems (see specification, [0026]). No prior art reference has disclosed or suggested this inventive concept of bringing the densities of the oily and the aqueous phases together in perfuming emulsions.

The Examiner states that "[t]he density of the [Stora] composition is inherently the same as that instantly claimed since the components are the same and used in the same amounts." This statement is incorrect because the Stora emulsions, which are focused on the values of the refractive index n , do not contain any ingredient that can suitably increase the density of the oil to bring it closer to the density of water. Applicant would like to further point out that the density, a critical parameter in the present invention, is not the same as the refractive index employed in Stora. In particular, the density measures the ratio of mass to volume of a substance, while the refractive index measures the degree to which a transparent material bends light. The ingredients used in the Stora emulsion function to narrow the difference between the refractive indexes of the oil and water phases, but do not effectively decrease the density difference between the phases as required in the present composition.

Since the present invention, based on the novel concept of narrowing the density difference between the oily and aqueous phases, employs ingredients that are not used in the prior art, and therefore provides a composition with significantly improved physical stability from that of the prior art, Applicant respectfully submits that Stora does not anticipate the present claims. Accordingly, the § 102 rejection should be withdrawn.

With respect to the objection of claims 6-9, Applicant believes that these claims should be allowed in light of the preceding explanation which shows that the prior art does not anticipate claim 1. In the interest of expediting the prosecution of this application, however, claim 6 is rewritten in independent form and includes all the limitations of the base claim. Accordingly, the objection of claims 6-9 should also be withdrawn.

Regarding the new claims, claims 12-13 depend from allowed claim 11, and new claim 14 recites a perfuming composition wherein the oily phase includes therein an oil-soluble agent having a higher density than oil in an amount effective to provide a difference between the density of the oily phase and that of the aqueous phase of less than or equal to 0.007. This claim is allowable for the same reasons set forth above, and claims 15-20 are allowable based on their dependency on claim 14.

In view of the above, the entire application is believed to be in condition for allowance, early notification of such would be appreciated. Should the Examiner not agree, a personal or telephonic interview is respectfully requested to discuss any remaining issues in order to expedite the eventual allowance of the claims.

Respectfully submitted,

Date

9/24/04



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Density of Cooking Oil

The Physics Factbook

Edited by Glenn Elert -- Written by his students
An educational, [fair use](#) website

Bibliographic Entry	Result (w/surrounding text)	Standardized Result
Weast, R.C., et al. <i>CRC Handbook of Chemistry and Physics</i> . Boca Raton: CRC Press, 1988-1989: F3.	[see table 1]	0.918 - 0.926 g/cm ³
Subrahmanyam, M.S.R., et al. <i>Estimation of the Sharma and Thermoacoustic Properties of Vegetable Oil</i> . <i>Journal of the American Oil Chemists Society</i> . 71 (August 1994).	[see table 2]	0.913 - 0.919 g/cm ³
Hodgman, C.D. & N.A. Lange. <i>Handbook of Chemistry and Physics</i> . Cleveland: Chemical Rubber Co., 1924: 312-313.	[see table 3]	0.915 - 0.928 g/cm ³
<i>Spectrum - Chemical, Safety and Laboratory Products</i> . Catalog. Spectrum Quality Products, 1997-1999	[see table 4]	0.910 - 0.920 g/cm ³

Cooking oil includes the well-known olive, sunflower, and canola oils and the not so well-known coconut, soy, and palm oils. Oil is removed from olives by pressing. The oil obtained from the first pressing is called virgin oil and is considered to be the highest quality salad and cooking oil. A second pressing of the olives produces oil of lesser quality that must be refined. Sunflower oil, because of its high protein content, is considered as semidrying oil and can be used in making paints or other industrial uses. But it is much more popular as a food and is considered by some as desirable as olive oil. It is also used in cooking, frying, and in the manufacture of margarine and shortening. Canola oil, which was previously called rapeseed oil, differs from other vegetable oils because it contains significant quantities of eicosenoic and erucic fatty acids. It is used as both an edible oil and as a lubricant for metal surfaces because of high viscosity of rapeseed oil.

Coconut oil comes from a part of the coconut called the copra, which is mostly made up of highly saturated oil. The oil is extracted from the copra by crushing and is used in baking and a variety of prepared foods. Of all the edible oils, coconut has the most nonedible uses. It is used in cosmetics, toiletries, and soap production. Palm oil is similar to coconut. Because of its highly saturated, it is used to make shortening and frying oil. Soy oil, obtained by solvent extraction, is the dominant vegetable oil worldwide. Most of the production is consumed as salad oil, cooking oil, and margarine. It is also used in a variety of prepared foods such as frozen desserts and coffee whiteners. Just like sunflower oil, it is considered a semidrying oil and has a variety of industrial uses.

The density of the oils varies with each type and temperature. The range is from 0.91 to 0.93 g/cm³ between the temperatures of 15 °C and 25 °C. Comparing to water, whose density is 1.00 g/ml, cooking oil is less dense.

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Table 1

Oils	Density (g/cm ³)	Temp (°C)
coconut	0.925	15
cotton seed	0.926	16
olive	0.918	15

Table 2

Temp (°C)	Sunflower	Rice Bran	Groundnut	Coconut
20	0.919	0.918	0.913	0.919

Table 3

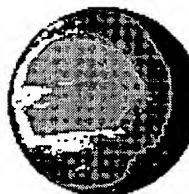
Name	Specific Gravity @ 15.5 °C	Name	Specific Gravity @ 15.5 °C
coconut	0.9259	peanut (arachis)	0.917-0.9209
corn (maize)	0.9213-0.9250	rapeseed	0.9133-0.9168
cotton seed	0.922-0.925	safflower	0.9246-0.9280
olive	0.9150-0.9180	sesame	0.9203-0.9237
palm	0.9210-0.9240	soja beans	0.924-0.9279
palm kernel	0.9119	sunflower	0.924-0.9258

Table 4

Cotton Seed oil, U.S.P./N.F. specific gravity @ 25 °C	0.915-0.921
Olive Oil, U.S.P./N.F. specific gravity @ 25 °C	0.910-0.915
Peanut Oil, U.S.P./N.F. specific gravity @ 25 °C	0.912-0.920

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